ISSUE: Discovery of Radioactive "Hot Spots" at the Original Landfill

Background

On May 20, 1993, during a FIDLER survey of an area of the original landfill (IHSS 115) in Operable Unit No. 5 (OU5), two areas of high radioactivity approximately ten feet apart were encountered. The purpose of the FIDLER survey was to locate and identify the source of the U238 within an High Purity Germanium (HPGe) located anomaly. The HPGe survey was conducted in 1990. The OU5 Phase I RFI/RI Work Plan (Volume I, Section 7.2.1, Stage 1) requires that elevated radiation readings identified by the HPGe be surveyed on the ground to define their locations. The FIDLER survey met its' objectives.

In the first area, a corroded metal disk, approximately six inches in diameter, broken in half and about 25 percent buried appears to be the source. The metal is associated with concrete debris in the area. This will not be confirmed as the source until the object is moved. The activity associated with this area is >50,000 cpm beta/gamma and >2,000 cpm alpha. There is no dose hazard present. Field gamma spec determined U238 to be the emitter.

In the second area, three or four pieces of the same material are assumed to be the source. These objects are clustered together, approximately spherical and about one inch in diameter. The surface of these objects are pitted and corroded. The activity associated with these objects is 5,000 cpm beta/gamma and no alpha. Field gamma spec was not performed at this location. One or two of these object have been shifted in position during surveying, but none have been removed from the immediate area.

On May 24, 1993 a piece of "pitted glass with yellow specks" about one half inch in diameter was found during the continuation of the FIDLER survey in the same area. The activity here is 5,000 cpm beta/gamma and no alpha.

When the first object was encountered by the EG&G subcontractor, workers left the area immediately as required by the site specific health and safety plan. EG&G Radiological Engineering (RE), EG&G Remediation Projects Management, and DOE Environmental Restoration were notified that day. RE determined the source to be U238 in the area of highest readings. No exposure rate was determined to be present. The area has been roped off and is considered a radiological controlled unit. RE has requested that the material be bagged and stored in a connex used as a temporary storage unit in the southeast contractor yard.

The suspected source objects have not been removed from the field. Photographs will be taken today (Thursday, May 27, 1993) and will be available next Tuesday (June 1).

Status

The EPA and CDH were verbally notified of the plan to remove these objects on May 25, 1993. The EPA contacted DOE on May 26 requesting a formal notification. The IAG (Statement of Work, Section I.B.10.) was quoted by the EPA as the appropriate framework by which the material should be removed from the field. The IAG states that emergency removals should be coordinated with the regulatory agencies. EG&G Facility Operations Management has asserted that this type of removal does not require a removal action because solid objects are not a "release" and there is no "threat of release" associated with these objects. They have recommended that these objects be immediately removed from the field to ensure they are not disturbed by anyone over the weekend. Operations further asserts that when solid plutonium was discovered in OU1 last year, the regulators stated that the removal action reference in the IAG (and the NCP) did not apply to that type of removal.

Recommendation

The EPA and CDH have stated that an emergency removal action under the IAG is necessary and that they must approve any action planned to remove objects in the original landfill. The NCP states that removal actions are appropriate for "Containment...of hazardous materials--where needed to reduce the likelihood of human, animal or food chain exposure..." I believe that the regulations require notification of and approval from the regulators in this case. If EG&G believes that leaving the material in the field until this approval is obtained will cause a hazard unrelated to environmental restoration efforts, the regulators should be notified and verbal concurrence should be recorded prior to any field activity.